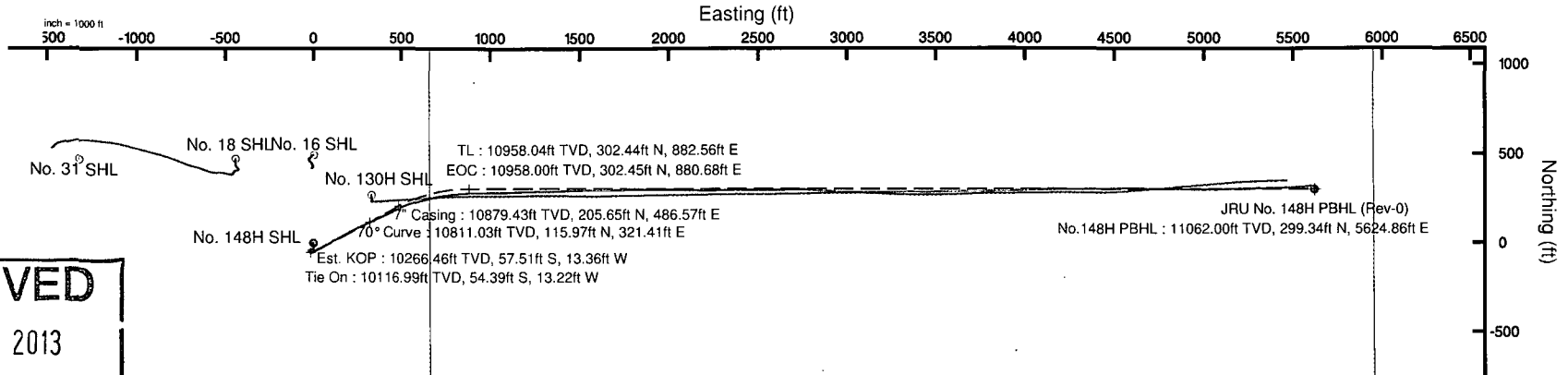




BOPCO, L.P.

Location: Eddy County, NM
Field: JRU NAD27
Facility: JRU No. 148H

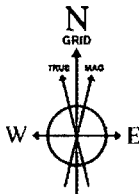
Slot: No. 148H SHL
Well: No. 148H
Wellbore: No. 148H PWB



RECEIVED

SEP 13 2013

WOOD ARTESIA



BGGM (1945.0 to 2014.0) Dip: 60.18° Field: 48480.3 nT
Magnetic North is 7.62 degrees East of True North (at 02/01/2013)
Grid North is 0.27 degrees East of True North

To correct azimuth from True to Grid subtract 0.27 degrees
To correct azimuth from Magnetic to Grid add 7.35 degrees

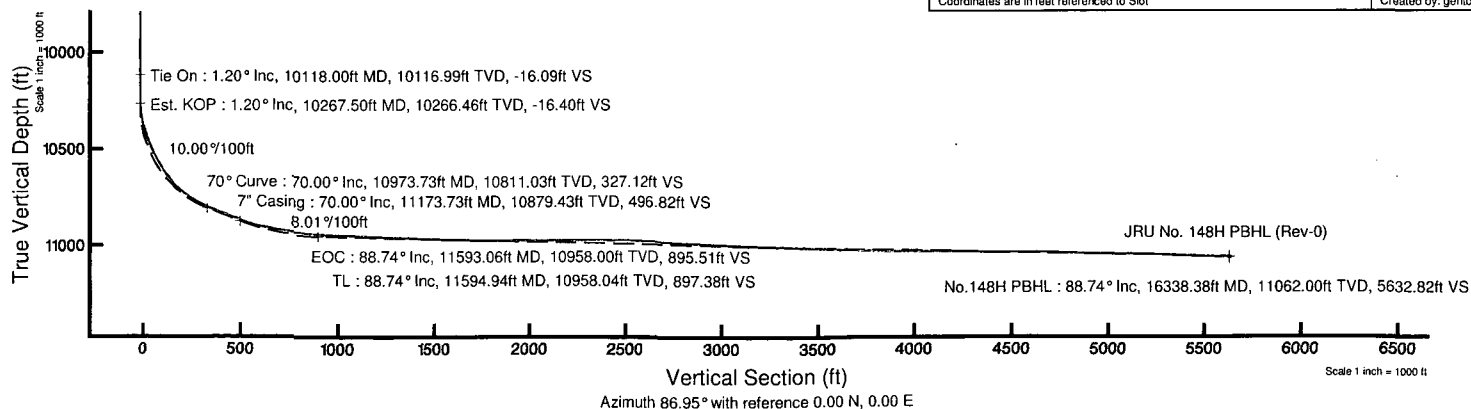
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.35 = 97.35

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%/100ft)	VS (ft)
Tie On	10118.00	1.200	182.600	10116.99	-54.39	-13.22	0.00	-16.09
Est. KOP	10267.50	1.200	182.600	10266.46	-57.51	-13.36	0.00	-16.40
70° Curve	10973.73	70.000	61.500	10811.03	115.97	321.41	10.00	327.12
7° Casing	11173.73	70.000	61.500	10879.43	205.65	486.57	0.00	496.82
EOC	11593.06	88.744	90.000	10958.00	302.45	880.68	8.01	895.51
TL	11594.94	88.744	90.038	10958.04	302.44	882.56	2.00	897.38
No. 148H PBHL	16338.38	88.744	90.038	11062.00	299.34	5624.86	0.00	5632.82

Plot reference wellpath is Rev-G.0

True vertical depths are referenced to Rig on No. 148H SHL (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 148H SHL (KB)	North Reference: Grid north
Rig on No. 148H SHL (KB) to Mean Sea Level: 3334 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 148H SHL): -3312 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentbry on 07/02/2013



30-015-41412

Rev-G.0



Actual Wellpath Report

No.148H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No. 148H SHL
Area	Eddy County, NM	Well	No. 148H
Field	JRU NAD27	Wellbore	No.148H AWB
Facility	JRU No. 148H		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999937	Report Generated	07/22/2013 at 9:41:09 AM
Convergence at slot	0.27° East	Database/Source file	WA Midland/No.148H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	656282.22	491033.61	32°20'56.226"N	103°49'38.155"W
Facility Reference Pt			656282.22	491033.61	32°20'56.226"N	103°49'38.155"W
Field Reference Pt			652495.44	494904.92	32°21'34.711"N	103°50'22.090"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 148H SHL (KB) to Facility Vertical Datum	22.00ft
Horizontal Reference Pt	Slot	Rig on No. 148H SHL (KB) to Mean Sea Level	3334.00ft
Vertical Reference Pt	Rig on No. 148H SHL (KB)	Rig on No. 148H SHL (KB) to Mud Line at Slot (No. 148H SHL)	22.00ft
ID Reference Pt	Rig on No. 148H SHL (KB)	Section Origin	N 0.00, E 0.00
Field Vertical Reference	Mean Sea Level	Section Azimuth	86.95°



Actual Wellpath Report

No.148H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 148H SHL
Area	Eddy County, NM	Well	No. 148H
Field	JRU NAD27	Wellbore	No.148H AWB
Facility	JRU No. 148H		

WELLPATH DATA (203 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	128.340	0.00	0.00	0.00	0.00	656282.22	491033.61	32°20'56.226"N	103°49'38.155"W	0.00	
100.00	0.100	128.340	100.00	0.07	-0.05	0.07	656282.28	491033.56	32°20'56.226"N	103°49'38.155"W	0.10	
200.00	0.460	175.950	200.00	0.14	-0.51	0.17	656282.38	491033.10	32°20'56.221"N	103°49'38.154"W	0.40	
300.00	0.200	143.930	300.00	0.24	-1.05	0.30	656282.51	491032.56	32°20'56.216"N	103°49'38.152"W	0.31	
400.00	0.510	189.260	400.00	0.24	-1.63	0.33	656282.54	491031.98	32°20'56.210"N	103°49'38.152"W	0.40	
500.00	0.470	186.460	499.99	0.08	-2.48	0.21	656282.43	491031.13	32°20'56.202"N	103°49'38.153"W	0.05	
600.00	0.720	264.680	599.99	-0.62	-2.94	-0.46	656281.75	491030.67	32°20'56.197"N	103°49'38.161"W	0.78	
700.00	0.400	278.880	699.98	-1.59	-2.95	-1.43	656280.78	491030.66	32°20'56.197"N	103°49'38.172"W	0.35	
800.00	0.510	291.420	799.98	-2.33	-2.73	-2.19	656280.02	491030.88	32°20'56.200"N	103°49'38.181"W	0.15	
900.00	0.300	230.160	899.98	-2.95	-2.74	-2.81	656279.41	491030.87	32°20'56.200"N	103°49'38.188"W	0.45	
1000.00	0.020	182.530	999.98	-3.16	-2.92	-3.01	656279.21	491030.69	32°20'56.198"N	103°49'38.191"W	0.29	
1100.00	0.290	240.930	1099.98	-3.39	-3.06	-3.23	656278.99	491030.55	32°20'56.196"N	103°49'38.193"W	0.28	
1200.00	0.290	133.050	1199.98	-3.44	-3.36	-3.27	656278.95	491030.25	32°20'56.193"N	103°49'38.194"W	0.47	
1300.00	0.120	334.770	1299.98	-3.30	-3.44	-3.13	656279.09	491030.18	32°20'56.193"N	103°49'38.192"W	0.40	
1400.00	0.200	206.310	1399.98	-3.43	-3.50	-3.25	656278.97	491030.11	32°20'56.192"N	103°49'38.194"W	0.29	
1500.00	0.220	197.460	1499.97	-3.58	-3.84	-3.38	656278.83	491029.77	32°20'56.189"N	103°49'38.195"W	0.04	
1600.00	0.160	218.420	1599.97	-3.74	-4.13	-3.53	656278.69	491029.48	32°20'56.186"N	103°49'38.197"W	0.09	
1700.00	0.170	119.550	1699.97	-3.71	-4.31	-3.49	656278.73	491029.30	32°20'56.184"N	103°49'38.196"W	0.25	
1800.00	0.230	22.680	1799.97	-3.50	-4.20	-3.28	656278.94	491029.41	32°20'56.185"N	103°49'38.194"W	0.30	
1900.00	0.180	290.370	1899.97	-3.55	-3.96	-3.35	656278.87	491029.65	32°20'56.187"N	103°49'38.195"W	0.30	
2000.00	0.170	7.010	1999.97	-3.67	-3.76	-3.48	656278.74	491029.85	32°20'56.189"N	103°49'38.196"W	0.22	
2100.00	0.180	65.070	2099.97	-3.50	-3.54	-3.32	656278.90	491030.07	32°20'56.192"N	103°49'38.194"W	0.17	
2200.00	0.150	355.650	2199.97	-3.36	-3.35	-3.19	656279.03	491030.26	32°20'56.194"N	103°49'38.193"W	0.19	
2300.00	0.280	112.140	2299.97	-3.14	-3.31	-2.97	656279.25	491030.30	32°20'56.194"N	103°49'38.190"W	0.37	
2400.00	0.280	134.890	2399.97	-2.76	-3.57	-2.57	656279.65	491030.04	32°20'56.191"N	103°49'38.186"W	0.11	
2500.00	0.210	44.410	2499.97	-2.46	-3.62	-2.27	656279.95	491030.00	32°20'56.191"N	103°49'38.182"W	0.35	
2600.00	0.150	239.950	2599.97	-2.44	-3.55	-2.25	656279.96	491030.06	32°20'56.191"N	103°49'38.182"W	0.36	
2700.00	0.150	241.440	2699.97	-2.67	-3.68	-2.48	656279.73	491029.93	32°20'56.190"N	103°49'38.185"W	0.00	
2800.00	0.230	131.880	2799.97	-2.65	-3.87	-2.45	656279.77	491029.74	32°20'56.188"N	103°49'38.184"W	0.31	
2900.00	0.230	0.630	2899.97	-2.49	-3.81	-2.30	656279.92	491029.80	32°20'56.189"N	103°49'38.182"W	0.42	
3000.00	0.320	159.870	2999.97	-2.40	-3.87	-2.20	656280.02	491029.74	32°20'56.188"N	103°49'38.181"W	0.54	
3100.00	0.280	150.000	3099.97	-2.21	-4.34	-1.98	656280.24	491029.27	32°20'56.184"N	103°49'38.179"W	0.07	
3200.00	0.720	137.480	3199.96	-1.70	-5.02	-1.43	656280.78	491028.59	32°20'56.177"N	103°49'38.172"W	0.45	
3300.00	0.520	159.390	3299.96	-1.16	-5.91	-0.85	656281.37	491027.71	32°20'56.168"N	103°49'38.166"W	0.31	
3400.00	0.830	134.660	3399.95	-0.54	-6.84	-0.17	656282.04	491026.77	32°20'56.159"N	103°49'38.158"W	0.42	
3500.00	0.660	150.140	3499.94	0.21	-7.85	0.63	656282.85	491025.76	32°20'56.149"N	103°49'38.149"W	0.26	
3600.00	0.880	129.550	3599.93	1.04	-8.84	1.51	656283.72	491024.77	32°20'56.139"N	103°49'38.138"W	0.35	
3700.00	0.310	173.880	3699.93	1.62	-9.59	2.13	656284.35	491024.02	32°20'56.131"N	103°49'38.131"W	0.69	
3725.00	0.240	203.020	3724.93	1.60	-9.71	2.12	656284.33	491023.90	32°20'56.130"N	103°49'38.131"W	0.62	
3735.00	0.100	138.900	3734.93	1.59	-9.74	2.11	656284.33	491023.88	32°20'56.130"N	103°49'38.131"W	2.16	
3830.00	0.200	183.200	3829.93	1.63	-9.96	2.16	656284.37	491023.65	32°20'56.128"N	103°49'38.131"W	0.15	
3940.00	0.500	150.800	3939.92	1.82	-10.57	2.38	656284.60	491023.04	32°20'56.122"N	103°49'38.128"W	0.32	
4035.00	0.600	172.500	4034.92	2.04	-11.43	2.65	656284.87	491022.18	32°20'56.113"N	103°49'38.125"W	0.24	
4130.00	0.700	172.700	4129.91	2.12	-12.50	2.79	656285.00	491021.11	32°20'56.103"N	103°49'38.124"W	0.11	
4225.00	0.400	187.200	4224.91	2.10	-13.40	2.82	656285.04	491020.21	32°20'56.094"N	103°49'38.123"W	0.35	



Actual Wellpath Report

No.148H AWP

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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No. 148H SHL
Area	Eddy County, NM	Well	No. 148H
Field	JRU NAD27	Wellbore	No.148H AWB
Facility	JRU No. 148H		

WELLPATH DATA (203 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1320.00	0.600	182.900	4319.91	1.99	-14.23	2.75	656284.97	491019.38	32°20'56.086"N	103°49'38.124"W	0.21	
1415.00	0.800	185.900	4414.90	1.84	-15.39	2.66	656284.88	491018.23	32°20'56.074"N	103°49'38.125"W	0.21	
1510.00	0.900	175.900	4509.89	1.75	-16.79	2.65	656284.86	491016.82	32°20'56.060"N	103°49'38.126"W	0.19	
1605.00	1.000	182.500	4604.88	1.68	-18.36	2.66	656284.88	491015.25	32°20'56.045"N	103°49'38.125"W	0.16	
1701.00	1.000	182.600	4700.86	1.52	-20.04	2.59	656284.80	491013.58	32°20'56.028"N	103°49'38.126"W	0.00	
1796.00	0.800	190.600	4795.85	1.28	-21.52	2.43	656284.64	491012.10	32°20'56.013"N	103°49'38.128"W	0.25	
1891.00	1.000	186.600	4890.84	0.99	-22.99	2.21	656284.43	491010.62	32°20'55.999"N	103°49'38.131"W	0.22	
1986.00	1.100	192.800	4985.82	0.60	-24.70	1.91	656284.13	491008.91	32°20'55.982"N	103°49'38.135"W	0.16	
2081.00	1.000	185.400	5080.81	0.23	-26.42	1.63	656283.85	491007.19	32°20'55.965"N	103°49'38.138"W	0.18	
2176.00	1.100	191.200	5175.79	-0.12	-28.14	1.38	656283.59	491005.47	32°20'55.948"N	103°49'38.141"W	-0.15	
2271.00	0.900	188.200	5270.77	-0.49	-29.77	1.09	656283.31	491003.84	32°20'55.932"N	103°49'38.144"W	0.22	
2366.00	0.900	171.300	5365.76	-0.56	-31.25	1.10	656283.32	491002.37	32°20'55.917"N	103°49'38.144"W	0.28	
2461.00	0.700	169.200	5460.75	-0.41	-32.55	1.32	656283.54	491001.06	32°20'55.904"N	103°49'38.142"W	0.21	
2556.00	0.800	160.600	5555.75	-0.14	-33.75	1.65	656283.87	490999.86	32°20'55.892"N	103°49'38.138"W	0.16	
2651.00	1.000	176.500	5650.73	-0.05	-35.20	1.92	656284.14	490998.41	32°20'55.878"N	103°49'38.135"W	-0.33	
2746.00	0.900	166.400	5745.72	0.19	-36.76	2.15	656284.36	490996.86	32°20'55.863"N	103°49'38.132"W	0.20	
2841.00	0.900	181.600	5840.71	0.27	-38.23	2.30	656284.52	490995.39	32°20'55.848"N	103°49'38.131"W	0.25	
2937.00	1.000	165.800	5936.70	0.37	-39.79	2.49	656284.70	490993.82	32°20'55.833"N	103°49'38.129"W	0.29	
3032.00	1.200	173.100	6031.68	0.60	-41.58	2.81	656285.03	490992.03	32°20'55.815"N	103°49'38.125"W	0.26	
3126.00	1.100	171.800	6125.66	-0.74	-43.45	3.06	656285.27	490990.16	32°20'55.796"N	103°49'38.122"W	-0.11	
3221.00	1.100	186.300	6220.64	0.68	-45.26	3.09	656285.30	490988.35	32°20'55.778"N	103°49'38.122"W	0.29	
3316.00	1.200	185.900	6315.62	0.38	-47.16	2.89	656285.10	490986.46	32°20'55.760"N	103°49'38.124"W	0.11	
3412.00	1.400	230.000	6411.60	-0.72	-48.91	1.88	656284.10	490984.70	32°20'55.742"N	103°49'38.136"W	1.03	
3506.00	1.900	296.300	6505.57	-2.99	-48.96	-0.39	656281.82	490984.65	32°20'55.742"N	103°49'38.163"W	1.97	
3602.00	2.000	323.400	6601.52	-5.31	-46.91	-2.82	656279.40	490986.70	32°20'55.762"N	103°49'38.191"W	-0.96	
3696.00	1.200	347.700	6695.48	-6.37	-44.63	-4.01	656278.21	490988.98	32°20'55.785"N	103°49'38.205"W	1.10	
3792.00	1.200	347.700	6791.46	-6.70	-42.67	-4.43	656277.78	490990.95	32°20'55.804"N	103°49'38.209"W	0.00	
3887.00	1.200	348.800	6886.44	-7.00	-40.72	-4.84	656277.38	490992.89	32°20'55.824"N	103°49'38.214"W	0.02	
3982.00	0.400	348.800	6981.43	-7.18	-39.42	-5.10	656277.12	490994.20	32°20'55.837"N	103°49'38.217"W	0.84	
4078.00	0.500	357.000	7077.42	-7.23	-38.67	-5.18	656277.03	490994.94	32°20'55.844"N	103°49'38.218"W	-0.12	
4173.00	0.200	6.800	7172.42	-7.20	-38.09	-5.19	656277.03	490995.52	32°20'55.850"N	103°49'38.218"W	0.32	
4268.00	0.100	7.000	7267.42	-7.16	-37.85	-5.16	656277.06	490995.77	32°20'55.852"N	103°49'38.218"W	0.11	
4363.00	0.300	288.700	7362.42	-7.38	-37.68	-5.38	656276.83	490995.93	32°20'55.854"N	103°49'38.220"W	0.31	
4458.00	0.200	287.100	7457.42	-7.76	-37.56	-5.78	656276.44	490996.06	32°20'55.855"N	103°49'38.225"W	0.11	
4553.00	0.100	335.800	7552.42	-7.95	-37.43	-5.97	656276.25	490996.18	32°20'55.856"N	103°49'38.227"W	0.16	
4648.00	0.100	25.900	7647.42	-7.94	-37.28	-5.97	656276.25	490996.33	32°20'55.858"N	103°49'38.227"W	0.09	
4742.00	0.200	18.000	7741.42	-7.84	-37.05	-5.88	656276.34	490996.56	32°20'55.860"N	103°49'38.226"W	0.11	
4837.00	0.200	235.100	7836.42	-7.92	-36.99	-5.96	656276.25	490996.63	32°20'55.861"N	103°49'38.227"W	0.40	
4933.00	0.200	225.000	7932.42	-8.19	-37.20	-6.22	656276.00	490996.41	32°20'55.859"N	103°49'38.230"W	0.04	
5028.00	0.600	250.400	8027.42	-8.79	-37.49	-6.81	656275.41	490996.13	32°20'55.856"N	103°49'38.237"W	-0.45	
5123.00	0.700	265.900	8122.41	-9.85	-37.69	-7.85	656274.36	490995.92	32°20'55.854"N	103°49'38.249"W	0.21	
5218.00	1.000	243.300	8217.40	-11.19	-38.11	-9.17	656273.04	490995.50	32°20'55.850"N	103°49'38.264"W	0.47	
5313.00	1.400	243.600	8312.38	-13.01	-39.00	-10.95	656271.26	490994.62	32°20'55.841"N	103°49'38.285"W	0.42	
5408.00	1.400	256.300	8407.35	-15.22	-39.79	-13.12	656269.10	490993.83	32°20'55.833"N	103°49'38.311"W	0.33	
5503.00	1.100	270.700	8502.33	-17.27	-40.05	-15.16	656267.06	490993.56	32°20'55.831"N	103°49'38.334"W	-0.45	



Actual Wellpath Report

No.148H AWP

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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION											
Operator	BOPCO, L.P.						Slot	No. 148H SHL			
Area	Eddy County, NM						Well	No. 148H			
Field	JRU NAD27						Wellbore	No.148H AWB			
Facility	JRU No. 148H										

WELLPATH DATA (203 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comment
8598.00	1.300	287.200	8597.31	-19.19	-39.72	-17.10	656265.12	490993.89	32°20'55.834"N	103°49'38.357"W	0.42	
8693.00	1.500	279.800	8692.28	-21.41	-39.19	-19.36	656262.86	490994.42	32°20'55.840"N	103°49'38.383"W	0.28	
8788.00	1.100	264.200	8787.26	-23.53	-39.07	-21.49	656260.73	490994.54	32°20'55.841"N	103°49'38.408"W	0.56	
8883.00	1.000	238.400	8882.24	-25.17	-39.60	-23.10	656259.12	490994.01	32°20'55.836"N	103°49'38.427"W	0.50	
8978.00	0.800	248.400	8977.23	-26.53	-40.28	-24.42	656257.79	490993.34	32°20'55.829"N	103°49'38.442"W	0.27	
9073.00	0.900	199.800	9072.22	-27.45	-41.22	-25.29	656256.92	490992.39	32°20'55.820"N	103°49'38.453"W	0.74	
9168.00	1.100	173.100	9167.21	-27.68	-42.83	-25.44	656256.78	490990.78	32°20'55.804"N	103°49'38.454"W	0.53	
9263.00	0.700	93.500	9262.20	-27.04	-43.77	-24.75	656257.47	490989.84	32°20'55.795"N	103°49'38.446"W	1.26	
9358.00	1.000	86.300	9357.19	-25.63	-43.75	-23.34	656258.88	490989.86	32°20'55.795"N	103°49'38.430"W	0.33	
9454.00	0.700	109.800	9453.18	-24.26	-43.90	-21.95	656260.26	490989.72	32°20'55.793"N	103°49'38.414"W	0.47	
9548.00	1.200	104.700	9547.16	-22.79	-44.34	-20.46	656261.76	490989.27	32°20'55.789"N	103°49'38.396"W	0.54	
9643.00	1.100	105.800	9642.14	-20.98	-44.84	-18.62	656263.60	490988.77	32°20'55.784"N	103°49'38.375"W	0.11	
9738.00	1.700	125.300	9737.11	-19.01	-45.91	-16.59	656265.62	490987.71	32°20'55.773"N	103°49'38.351"W	0.80	
9833.00	1.500	143.300	9832.08	-17.22	-47.72	-14.70	656267.52	490985.90	32°20'55.755"N	103°49'38.329"W	0.57	
9928.00	1.100	158.500	9927.05	-16.24	-49.56	-13.62	656268.59	490984.05	32°20'55.737"N	103°49'38.317"W	0.55	
10023.00	1.800	177.800	10022.02	-15.97	-51.90	-13.23	656268.98	490981.71	32°20'55.714"N	103°49'38.313"W	0.89	
10118.00	1.200	182.600	10116.99	-16.09	-54.39	-13.22	656269.00	490979.23	32°20'55.689"N	103°49'38.313"W	0.64	
10169.00	1.600	204.100	10167.98	-16.47	-55.57	-13.54	656268.68	490978.04	32°20'55.677"N	103°49'38.316"W	1.28	
10201.00	1.600	211.200	10199.96	-16.92	-56.36	-13.95	656268.27	490977.26	32°20'55.669"N	103°49'38.321"W	0.62	
10233.00	0.500	122.200	10231.96	-17.06	-56.82	-14.06	656268.15	490976.80	32°20'55.665"N	103°49'38.322"W	5.21	
10264.00	3.000	64.000	10262.94	-16.20	-56.53	-13.22	656269.00	490977.08	32°20'55.668"N	103°49'38.313"W	8.93	
10296.00	6.200	61.500	10294.84	-13.87	-55.34	-10.95	656271.27	490978.27	32°20'55.679"N	103°49'38.286"W	10.02	
10328.00	9.400	63.900	10326.54	-9.91	-53.37	-7.08	656275.14	490980.25	32°20'55.699"N	103°49'38.241"W	10.05	
10359.00	12.700	64.500	10356.96	-4.43	-50.78	-1.73	656280.49	490982.83	32°20'55.724"N	103°49'38.178"W	10.65	
10391.00	16.300	64.400	10387.93	-2.97	-47.33	-5.50	656287.71	490986.29	32°20'55.758"N	103°49'38.094"W	11.25	
10422.00	19.300	63.500	10417.44	11.69	-43.16	14.01	656296.22	490990.45	32°20'55.799"N	103°49'37.995"W	9.72	
10454.00	22.100	63.500	10447.38	22.07	-38.12	24.13	656306.34	490995.50	32°20'55.848"N	103°49'37.876"W	8.75	
10486.00	24.000	62.400	10476.82	33.51	-32.41	35.28	656317.50	491001.20	32°20'55.904"N	103°49'37.746"W	6.09	
10518.00	26.000	62.300	10505.82	45.81	-26.14	47.26	656329.48	491007.47	32°20'55.966"N	103°49'37.606"W	6.25	
10549.00	28.300	62.000	10533.40	58.65	-19.53	59.77	656341.98	491014.08	32°20'56.030"N	103°49'37.460"W	7.43	
10581.00	31.000	61.600	10561.21	72.97	-12.05	73.72	656355.93	491021.56	32°20'56.104"N	103°49'37.297"W	8.46	
10613.00	34.600	61.200	10588.10	88.61	-3.75	88.93	656371.14	491029.86	32°20'56.185"N	103°49'37.119"W	11.27	
10645.00	36.800	60.800	10614.09	105.40	5.31	105.26	656387.47	491038.92	32°20'56.274"N	103°49'36.928"W	6.91	
10676.00	39.300	60.900	10638.50	122.55	14.61	121.95	656404.16	491048.22	32°20'56.365"N	103°49'36.733"W	8.07	
10708.00	42.400	60.700	10662.70	141.34	24.82	140.22	656422.42	491058.43	32°20'56.466"N	103°49'36.520"W	9.70	
10740.00	45.700	61.100	10685.70	161.32	35.64	159.66	656441.86	491069.25	32°20'56.572"N	103°49'36.292"W	10.35	
10771.00	49.100	61.300	10706.68	181.87	46.63	179.65	656461.85	491080.24	32°20'56.679"N	103°49'36.059"W	10.98	
10803.00	52.900	62.000	10726.81	204.35	58.43	201.53	656483.74	491092.04	32°20'56.795"N	103°49'35.803"W	12.00	
10834.00	56.600	63.200	10744.70	227.42	70.08	224.01	656506.21	491103.68	32°20'56.909"N	103°49'35.540"W	12.35	
10866.00	60.200	64.300	10761.47	252.46	82.12	248.45	656530.65	491115.73	32°20'57.027"N	103°49'35.255"W	11.62	
10898.00	62.400	64.600	10776.83	278.39	94.23	273.77	656555.97	491127.83	32°20'57.146"N	103°49'34.959"W	6.92	
10930.00	64.400	64.700	10791.16	304.86	106.48	299.63	656581.83	491140.08	32°20'57.266"N	103°49'34.657"W	6.26	
10961.00	67.800	65.200	10803.72	331.14	118.48	325.30	656607.50	491152.08	32°20'57.384"N	103°49'34.357"W	11.07	
10993.00	69.500	65.400	10815.37	358.84	130.93	352.38	656634.57	491164.53	32°20'57.506"N	103°49'34.041"W	5.34	
11025.00	69.700	65.200	10826.52	386.71	143.46	379.63	656661.82	491177.06	32°20'57.628"N	103°49'33.722"W	0.86	



Actual Wellpath Report

No.148H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No. 148H SHL
Area	Eddy County, NM	Well	No. 148H
Field	JRU NAD27	Wellbore	No.148H AWB
Facility	JRU No. 148H		

WELLPATH DATA (203 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comment
1057.00	69.800	65.300	10837.60	414.61	156.03	406.89	656689.08	491189.63	32°20'57.751"N	103°49'33.404"W	0.43	
1088.00	69.800	65.000	10848.30	441.62	168.26	433.29	656715.48	491201.86	32°20'57.871"N	103°49'33.096"W	0.91	
1118.00	69.800	65.000	10858.66	467.73	180.16	458.81	656740.99	491213.76	32°20'57.988"N	103°49'32.798"W	0.00	
1176.00	69.600	65.000	10878.78	518.19	203.15	508.11	656790.29	491236.74	32°20'58.213"N	103°49'32.222"W	0.34	
1207.00	72.100	68.700	10888.96	545.68	214.65	535.03	656817.21	491248.25	32°20'58.325"N	103°49'31.907"W	13.86	
1239.00	75.800	72.800	10897.80	575.20	224.77	564.05	656846.23	491258.37	32°20'58.424"N	103°49'31.568"W	16.89	
1270.00	78.500	74.900	10904.70	604.64	233.18	593.08	656875.26	491266.77	32°20'58.506"N	103°49'31.229"W	10.93	
1302.00	78.500	74.900	10911.08	635.30	241.34	623.36	656905.53	491274.94	32°20'58.585"N	103°49'30.876"W	0.00	
1334.00	79.200	76.700	10917.27	666.10	249.05	653.79	656935.97	491282.64	32°20'58.660"N	103°49'30.521"W	5.94	
1365.00	80.200	78.100	10922.81	696.18	255.70	683.56	656965.73	491289.29	32°20'58.725"N	103°49'30.174"W	5.49	
1397.00	81.300	79.100	10927.95	727.43	261.94	714.52	656996.69	491295.53	32°20'58.785"N	103°49'29.812"W	4.62	
1428.00	82.600	82.200	10932.30	757.93	266.92	744.80	657026.97	491300.52	32°20'58.833"N	103°49'29.459"W	10.75	
1460.00	83.600	84.400	10936.14	789.63	270.63	776.35	657058.51	491304.22	32°20'58.868"N	103°49'29.091"W	7.51	
1492.00	83.700	83.900	10939.68	821.40	273.87	807.99	657090.15	491307.47	32°20'58.899"N	103°49'28.722"W	1.58	
1523.00	85.000	84.700	10942.73	852.21	276.94	838.68	657120.84	491310.53	32°20'58.927"N	103°49'28.364"W	4.92	
1555.00	86.900	86.000	10944.99	884.12	279.52	870.50	657152.65	491313.12	32°20'58.952"N	103°49'27.993"W	7.19	
1587.00	87.900	89.700	10946.44	916.08	280.72	902.43	657184.59	491314.31	32°20'58.962"N	103°49'27.621"W	11.97	
1618.00	87.800	88.600	10947.61	947.03	281.18	933.41	657215.56	491314.77	32°20'58.965"N	103°49'27.260"W	3.56	
1650.00	87.400	89.600	10948.95	978.98	281.68	965.38	657247.53	491315.28	32°20'58.968"N	103°49'26.887"W	3.36	
1718.00	87.200	89.600	10952.15	1046.83	282.16	1033.30	657315.45	491315.75	32°20'58.970"N	103°49'26.095"W	0.29	
1813.00	87.400	87.400	10956.63	1141.69	284.64	1128.15	657410.30	491318.23	32°20'58.990"N	103°49'24.990"W	2.32	
1908.00	87.800	88.900	10960.60	1236.58	287.71	1223.02	657505.16	491321.30	32°20'59.016"N	103°49'23.884"W	1.63	
2003.00	87.900	89.100	10964.17	1331.45	289.36	1317.94	657600.07	491322.95	32°20'59.028"N	103°49'22.777"W	0.24	
2130.00	88.400	87.500	10968.27	1458.35	293.13	1444.81	657726.93	491326.72	32°20'59.059"N	103°49'21.298"W	1.32	
2193.00	88.500	89.200	10969.97	1521.30	294.94	1507.76	657789.88	491328.53	32°20'59.074"N	103°49'20.564"W	2.70	
2289.00	88.700	89.600	10972.32	1617.19	295.95	1603.73	657885.84	491329.54	32°20'59.080"N	103°49'19.446"W	0.47	
2384.00	88.800	88.800	10974.39	1712.09	297.27	1698.69	657980.80	491330.86	32°20'59.088"N	103°49'18.339"W	0.85	
2574.00	91.500	89.900	10973.89	1901.90	299.43	1888.66	658170.75	491333.02	32°20'59.101"N	103°49'16.124"W	1.53	
2669.00	89.100	89.600	10973.40	1996.78	299.84	1983.65	658265.74	491333.43	32°20'59.100"N	103°49'15.017"W	2.55	
2764.00	89.800	91.600	10974.31	2091.58	298.85	2078.64	658360.72	491332.44	32°20'59.086"N	103°49'13.910"W	2.23	
2859.00	90.500	90.800	10974.06	2186.32	296.86	2173.61	658455.69	491330.45	32°20'59.062"N	103°49'12.803"W	1.12	
2954.00	89.500	89.200	10974.06	2281.18	296.86	2268.61	658550.68	491330.45	32°20'59.057"N	103°49'11.695"W	1.99	
3050.00	89.600	88.500	10974.81	2377.12	298.78	2364.59	658646.65	491332.38	32°20'59.072"N	103°49'10.577"W	0.74	
3145.00	89.000	89.900	10975.97	2472.04	300.11	2459.57	658741.62	491333.70	32°20'59.080"N	103°49'09.469"W	1.60	
3240.00	88.100	90.700	10978.38	2566.85	299.61	2554.53	658836.58	491333.20	32°20'59.071"N	103°49'08.362"W	1.27	
3334.00	87.000	88.800	10982.40	2660.64	300.02	2648.44	658930.48	491333.61	32°20'59.070"N	103°49'07.268"W	2.33	
3429.00	87.100	90.700	10987.29	2755.40	300.44	2743.31	659025.35	491334.03	32°20'59.070"N	103°49'06.162"W	2.00	
3524.00	87.400	93.700	10991.85	2849.88	296.79	2838.12	659120.15	491330.39	32°20'59.029"N	103°49'05.057"W	3.17	
3623.00	87.700	94.100	10996.08	2948.06	290.07	2936.80	659218.82	491323.66	32°20'58.958"N	103°49'03.907"W	0.50	
3718.00	87.600	89.900	10999.97	3042.59	286.75	3031.64	659313.66	491320.35	32°20'58.921"N	103°49'02.802"W	4.42	
3813.00	87.900	91.100	11003.70	3137.34	285.93	3126.56	659408.57	491319.52	32°20'58.908"N	103°49'01.695"W	1.30	
3908.00	87.800	89.100	11007.27	3232.12	285.76	3221.49	659503.50	491319.35	32°20'58.902"N	103°49'00.589"W	2.11	
4003.00	87.900	89.200	11010.83	3326.99	287.17	3316.41	659598.41	491320.76	32°20'58.911"N	103°48'59.482"W	0.15	
4098.00	88.000	91.400	11014.23	3421.76	286.67	3411.34	659693.34	491320.26	32°20'58.902"N	103°48'58.376"W	2.32	
4193.00	87.800	87.700	11017.71	3516.58	287.42	3506.26	659788.25	491321.01	32°20'58.905"N	103°48'57.269"W	3.90	



Actual Wellpath Report

No.148H AWP

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REFERENCE WELLPATH IDENTIFICATION											
Operator	BOPCO, L.P.							Slot	No. 148H SHL		
Area	Eddy County, NM							Well	No. 148H		
Field	JRU NAD27							Wellbore	No.148H AWB		
Facility	JRU No. 148H										

WELLPATH DATA (203 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comment
4288.00	88.000	89.500	11021.19	3611.47	289.74	3601.16	659883.15	491323.33	32°20'58.923"N	103°48'56.163"W	1.91	
4383.00	87.800	88.900	11024.68	3706.34	291.06	3696.09	659978.07	491324.65	32°20'58.932"N	103°48'55.057"W	0.67	
4478.00	88.400	89.100	11027.83	3801.22	292.72	3791.02	660072.99	491326.31	32°20'58.944"N	103°48'53.950"W	0.67	
4573.00	88.800	89.100	11030.15	3896.13	294.21	3885.98	660167.95	491327.80	32°20'58.954"N	103°48'52.843"W	0.42	
4668.00	89.100	88.800	11031.89	3991.05	295.95	3980.95	660262.91	491329.54	32°20'58.966"N	103°48'51.736"W	0.45	
4764.00	90.700	88.500	11032.06	4087.01	298.21	4076.92	660358.87	491331.80	32°20'58.984"N	103°48'50.617"W	1.70	
4859.00	89.900	89.200	11031.56	4181.95	300.12	4171.90	660453.84	491333.71	32°20'58.998"N	103°48'49.510"W	1.12	
4953.00	88.800	89.700	11032.62	4275.86	301.02	4265.89	660547.83	491334.61	32°20'59.003"N	103°48'48.414"W	1.29	
5047.00	89.200	88.600	11034.26	4369.77	302.42	4359.86	660641.79	491336.01	32°20'59.012"N	103°48'47.319"W	1.25	
5143.00	90.200	88.700	11034.77	4465.73	304.68	4455.83	660737.76	491338.27	32°20'59.030"N	103°48'46.200"W	1.05	
5238.00	90.100	89.400	11034.52	4560.66	306.25	4550.82	660832.74	491339.84	32°20'59.041"N	103°48'45.093"W	0.74	
5334.00	88.600	91.600	11035.61	4656.46	305.42	4646.80	660928.71	491339.01	32°20'59.028"N	103°48'43.974"W	2.77	
5428.00	87.500	90.300	11038.81	4750.18	303.86	4740.73	661022.64	491337.45	32°20'59.008"N	103°48'42.879"W	1.81	
5523.00	87.800	91.200	11042.70	4844.89	302.61	4835.64	661117.54	491336.21	32°20'58.991"N	103°48'41.773"W	1.00	
5618.00	89.000	92.200	11045.35	4939.52	299.80	4930.56	661212.45	491333.39	32°20'58.959"N	103°48'40.667"W	1.64	
5713.00	88.900	89.300	11047.10	5034.29	298.55	5025.52	661307.41	491332.15	32°20'58.942"N	103°48'39.560"W	3.05	
5808.00	89.100	87.700	11048.75	5129.24	301.04	5120.47	661402.36	491334.63	32°20'58.962"N	103°48'38.453"W	1.70	
5904.00	89.100	89.200	11050.26	5225.19	303.64	5216.42	661498.30	491337.23	32°20'58.983"N	103°48'37.334"W	1.56	
6000.00	88.000	88.200	11052.69	5321.11	305.81	5312.37	661594.24	491339.40	32°20'59.000"N	103°48'36.216"W	1.55	
6094.00	88.200	89.600	11055.81	5415.00	307.62	5406.29	661688.16	491341.21	32°20'59.013"N	103°48'35.121"W	1.50	
6190.00	87.900	87.000	11059.08	5510.91	310.46	5502.19	661784.05	491344.05	32°20'59.037"N	103°48'34.003"W	2.72	
6236.00	88.300	86.100	11060.60	5556.88	313.23	5548.08	661829.93	491346.82	32°20'59.062"N	103°48'33.468"W	2.14	
6303.00	88.300	86.100	11062.59	5623.85	317.78	5614.89	661896.75	491351.38	32°20'59.104"N	103°48'32.689"W	0.00	Proj to Bit

TARGETS											
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape		
JRU No. 148H PBHL (Rev-0)		11062.00	299.34	5624.86	661906.71	491332.93	32°20'58.921"N	103°48'32.574"W	point		

WELLPATH COMPOSITION - Ref Wellbore: No.148H AWB Ref Wellpath: No.148H AWP											
Start MD [ft]	End MD [ft]	Positional Uncertainty Model				Log Name/Comment				Wellbore	
0.00	3725.00	Generic gyro - northseeking (Standard)				MS Gyro <100-3725>				No.148H AWB	
3725.00	11650.00	NaviTrak (Standard)				BHI MWD NaviTrak <610-11650				No.148H AWB	
11650.00	16236.00	NaviTrak (Standard)				BHI MWD NaviTrak <11718-16236>				No.148H AWB	
16236.00	16303.00	Blind Drilling (std)				Projection to bit				No.148H AWB	